CLAIMS

- 1. A photolithographic method comprising forming overlapping exposure patterns on a photosensitive material from light passed through a single reticle; the reticle being displaced relative to the photosensitive material between a first exposure to a first light and a second exposure to a second light so that a first pattern of the first light produced by the first exposure is offset and overlapping on the photosensitive material relative to a second pattern of the second light produced by the second exposure.
- 2. The method of claim 1 wherein the displacement of the reticle relative to the photosensitive material comprises movement of the reticle while the photosensitive material is held stationary.
- 3. The method of claim 1 wherein the displacement of the reticle relative to the photosensitive material comprises movement of the photosensitive material while the reticle is held stationary.
- 4. The method of claim 1 wherein the displacement of the reticle relative to the photosensitive material comprises movement of both the photosensitive material and the reticle relative to one another.

Docket No. MI22-17

- 5. The method of claim 1 wherein the first light has a different wavelength than the second light.
- 6. The method of claim 1 wherein the first light has the same wavelength as the second light.
- 7. The method of claim 1 wherein the photosensitive material is over a semiconductive substrate, and wherein at least portions of the combined first and second patterns define portions of capacitor structures; the method further comprising:

selectively removing either the exposed or unexposed portions of the photosensitive material to pattern the photosensitive material into blocks comprising an outline of the portions of the capacitor structures; and

transferring the outline to at least a portion of the semiconductive substrate underlying the photosensitive material to form the portions of the capacitor structures.

8. The method of claim 1 wherein the photosensitive material is over a semiconductive substrate, and wherein at least portions of the combined first and second patterns define portions of DRAM structures; the method further comprising:

selectively removing either the exposed or unexposed portions of the photosensitive material to pattern the photosensitive material into blocks comprising an outline of the portions of the DRAM structures; and

transferring the outline to at least a portion of the semiconductive substrate underlying the photosensitive material to form the portions of the DRAM structures.

- 9. A photolithographic method comprising forming overlapping first and second exposure patterns on a photosensitive material from electromagnetic radiation passed through a single reticle; wherein the first exposure pattern of the radiation comprises features separated by about a minimum feature spacing that can be accomplished with a single reticle exposure during the photolithographic processing; and wherein the overlapping first and second patterns comprise features separated by less than said minimum feature spacing.
- 10. The method of claim 9 wherein at least 20% of the second exposure pattern overlaps the first exposure pattern.

Docket No. MI22-17-3

- 11. The method of claim 9 wherein at least 30% of the second exposure pattern overlaps the first exposure pattern.
- 12. The method of claim 9 wherein from at least about 20% to about 80% of the second exposure pattern overlaps the first exposure pattern.
- 13. The method of claim 9 wherein from at least about 20% to about 50% of the second exposure pattern overlaps the first exposure pattern.
- 14. The method of claim 9 wherein the photosensitive material is over a semiconductive substrate, and wherein at least portions of the combined first and second patterns define portions of semiconductor device structures; the method further comprising:

selectively removing either the exposed or unexposed portions of the photosensitive material to pattern the photosensitive material into blocks comprising an outline of the portions of the semiconductor device structures; and

transferring the outline to at least a portion of the semiconductive substrate underlying the photosensitive material to form the portions of the semiconductor device structures.

15. The method of claim 9 wherein the photosensitive material is over a semiconductive substrate, and wherein at least portions of the combined first and second patterns define portions of capacitor structures; the method further comprising:

selectively removing either the exposed or unexposed portions of the photosensitive material to pattern the photosensitive material into blocks comprising an outline of the portions of the capacitor structures; and

transferring the outline to at least a portion of the semiconductive substrate underlying the photosensitive material to form the portions of the capacitor structures.

16. A photolithographic method comprising:

providing a semiconductor substrate having a photosensitive material thereover;

passing electromagnetic radiation through a reticle to form a first pattern of the radiation on the photosensitive material; the reticle having a first dimension along a first axis;

displacing the reticle relative to the semiconductor substrate along the first axis by an increment less than the first dimension of the reticle; and

after the displacing, passing the electromagnetic radiation through the reticle to form a second pattern of the radiation on the photosensitive material.

- 17. The method of claim 16 wherein the reticle comprises a first portion that defines that first pattern and second portion which is opaque to the radiation; the second portion having an area that is at least about 20% of the area of the reticle.
- 18. The method of claim 16 wherein the reticle comprises a first portion that defines that first pattern and second portion which is opaque to the radiation; the second portion having an area that is at least about 30% of the area of the reticle.
- 19. The method of claim 16 wherein the reticle comprises a first portion that defines that first pattern and second portion which is opaque to the radiation; the first portion being about equal in area to the second portion.
- 20. The method of claim 16 wherein the reticle has a second dimension along a second axis; the second axis being orthogonal to the first axis, the method further comprising:

displacing the reticle relative to the semiconductor substrate along the second axis by an increment less than the second dimension of the reticle; and

after displacing the reticle along the second axis, passing the radiation through the reticle to form another pattern of the radiation on the photosensitive material.

- 21. The method of claim 20 wherein the displacing the reticle along the second axis occurs before the displacing the reticle along the first axis.
- 22. The method of claim 20 wherein the displacing the reticle along the second axis occurs after the forming the second pattern of the radiation on the photosensitive material.
- 23. The method of claim 16 wherein the first pattern of the radiation comprises features separated by about a minimum feature spacing that can be accomplished with a single reticle exposure at the time of the photolithographic processing; and wherein the overlapping first and second patterns comprise features separated by less than said minimum feature spacing.
- 24. The method of claim 16 wherein the first pattern of the radiation consists of a unit feature which is repeated a plurality of times across the pattern.
- 25. The method of claim 16 wherein the first pattern of the radiation comprises a first unit feature which is repeated a plurality of times across the pattern, and a second unit feature which is not repeated across the pattern.

Docket No. MI22-1

26. The method of claim 16 wherein the first pattern of the radiation comprises first and second features; and wherein the first features are repeated in the first pattern more frequently than any repeating of the second features in the first pattern.